



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,349	04/03/2006	Katsumi Koza	P29569	9240
52123	7590	12/11/2009		
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				
EXAMINER				
DAVIS, PATRICIA A				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
12/11/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

### Office Action Summary

**Application No.**

10/574,349

**Applicant(s)**

KOZU ET AL.

**Examiner**

PATRICIA DAVIS

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/22)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 7/3/06, 3/28/08

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 24, 2009 has been entered. Claims 1, 2, 7 and 8 were amended.

3. The text of those sections of Title 35 U.S.C. not included in this action can be found in the prior Office Action issued on July 24, 2009.

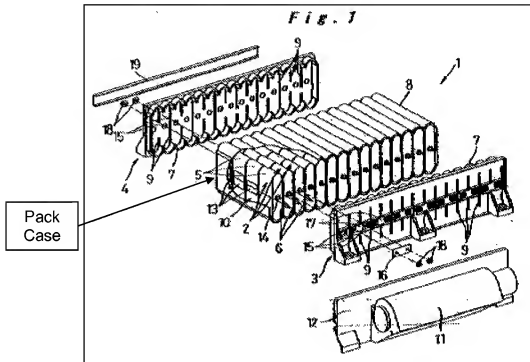
### ***Claim Rejections - 35 USC § 103***

4. The claim rejections under 35 U.S.C. 103(a) as unpatentable over Hamazaki et al. (JP 11-354089A) and Masumoto et al. (WO 03/003485) on claims 1, 2, 4-8 and 11 are withdrawn, because independent claims 1, 2, 7 and 8 have been amended.

5. The claim rejections unpatentable over Hamazaki et al. (JP 11-354089A), Masumoto et al. (WO 03/003485) and Hamada on claims 3, 6, 9 and 12 withdrawn, because independent claims 1, 2, 7 and 8 have been amended.

6. Claims 1-3, 6- 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (U.S. Pat. Pub. No. 2004/0058233) (hereinafter "Hamada") in view of Marukawa et al. (U.S. Pat. No. 6,275,003) (hereinafter "Marukawa").

Regarding claims 1 and 7, Hamada teaches a battery pack composed of a plurality of rechargeable battery modules (2) where a sealing plate (22) covers an open end of the case and an electrode terminal provided on the sealing plate (22) side and a tubular cover (pack case 8) for accommodating the rechargeable batteries (see pars. 0029, 0045; see fig. 3). Hamada teaches that the electrode assembly has a liquid solution (see par. 0035). Hamada further teaches terminal holes (circuit substrate 15). It is inherent that the circuit substrate would be able to manage the operating state of the rechargeable batteries. Hamada teaches that the battery modules (2) are arranged in parallel and in the same direction and the terminal holes (circuit substrate 15) are mounted on the holding bracket (terminal side frame 3) that holds the sealing plate side of the battery modules (plurality of rechargeable batteries 2), a holding bracket (terminal side frame 3) and holding bracket (bottom frame 4) (see par. 0029; fig. 1).



Hamada does not specifically teach the rechargeable batteries are surrounded by a center frame or that a resin mold is provided for covering the necessary surface of the circuit substrate after the circuit substrate is electrically connected to the rechargeable batteries and to input and output terminals.

However, Marukawa teaches binding straps (center frame 4) for tightly tying the battery modules (2) together (see col. 4, lines 50-55; fig. 1). Marukawa further teaches that synthetic resin covers may be provided for covering the top and outside faces of the connection modules (circuit substrate) to prevent the risk or short-circuiting (see col. 2, lines 48-54).

Therefore, it would have been obvious to one with ordinary skill in the art to incorporate the center frame and synthetic resin covers into the battery pack of Hamada, because Marukawa teaches that the binding straps are used to tightly tie the

battery modules together and that the synthetic resin covers is used to prevent short-circuiting.

Regarding claims 2 and 8, Hamada teaches a battery pack composed of a plurality of rechargeable battery modules (2) where a sealing plate (22) covers an open end of the case and an electrode terminal provided on the sealing plate (22) side and a tubular cover (pack case 8) for accommodating the rechargeable batteries (see pars. 0029, 0045; see fig. 3). Hamada teaches that the electrode assembly has a liquid solution (see par. 0035). Hamada further teaches terminal holes (circuit substrate 15). It is inherent that the circuit substrate would be able to manage the operating state of the rechargeable batteries. Hamada teaches that the battery modules (2) are arranged in parallel and connected in series and in the same direction and the terminal holes (circuit substrate 15) are mounted on the holding bracket (terminal side frame 3) that holds the sealing plate side of the battery modules (plurality of rechargeable batteries 2) a holding bracket (terminal side frame 3) and holding bracket (bottom frame 4) (see pars. 0029 and 0052; fig. 1). Hamada further teaches that the terminal holes (circuit substrate 15) are mounted to the holding bracket (terminal side frame 3) and that the terminals holes (circuit substrate 15) that have holes for the connection terminals (projections 14) where a bus bar (connection plate 16) is inserted into the terminal holes (circuit substrate 15) that is provided with holes (connection holes) to join the terminal holes (circuit substrate 15) to the connection terminals (projections 14) (see pars. 0033-0035; fig. 1).

Hamada does not specifically teach the rechargeable batteries are surrounded by a center frame or that a resin mold is provided for covering the necessary surface of the circuit substrate after the circuit substrate is electrically connected to the rechargeable batteries and to input and output terminals.

However, Marukawa teaches binding straps (center frame 4) for tightly tying the battery modules (2) together (see col. 4, lines 50-55; fig. 1). Marukawa further teaches that synthetic resin covers may be provided for covering the top and outside faces of the connection modules (circuit substrate) to prevent the risk or short-circuiting (see col. 2, lines 48-54).

Therefore, it would have been obvious to one with ordinary skill in the art to incorporate the center frame and synthetic resin covers into the battery pack of Hamada, because Marukawa teaches that the binding straps are used to tightly tie the battery modules together and that the synthetic resin covers is used to prevent short-circuiting.

Regarding claims 3, 6, 9 and 12, Hamada teaches that the batteries are in a flat prismatic shape held by holding brackets (frames 3, 4) in a parallel spaced relationship with the largest flat surfaces opposite to each other (see pars. 0035, 0044; fig. 1).

7. Claims 4, 5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada in view of Marukawa as applied to claims 1-3, 6-9 and 12 above, and in further view of Masumoto et al. (WO 03/003485) (hereinafter "Masumoto").

Regarding claims 4 and 10, Hamada teaches ring-shaped protrusive shaped walls (7) that have recesses facing the sealing plate side and terminal holes (circuit substrate 15) (see fig. 1).

Hamada and Marukawa do not specifically teach that the resin mold covers the surface on which the electric components are mounted, including electrically conductive parts.

However, Masumoto teaches that the resin mold covers all of the electronic components between the battery (plain battery 101) and the terminal plate (102) on the surface where the electronic components are mounted to be integral with one another to exhibit excellent bonding strength, electrical insulation, chemical resistance, and to adverse any adverse thermal effects (see col. 10, lines 32-55 and col. 11, lines 39-61; fig 6A).

Therefore, it would have been obvious to one with ordinary skill in the art to combine the battery pack of Masumoto to have a resin that covers the necessary surface of the circuit substrate, because Masumoto teaches it makes the battery and the terminal plate integral with one another to exhibit excellent bonding strength, electrical insulation, chemical resistance, and to adverse any adverse thermal effects.

Regarding claims 5 and 11, Hamada teaches ring-shaped protrusive shaped walls (7) that have recesses facing the sealing plate side and terminal holes (circuit substrate 15) (see fig. 1).

Hamada and Marukawa do not specifically teach that it the resin mold is formed by filling a resin in which the circuit substrate is accommodated to cover.



However, Masumoto teaches the battery, wherein the resin mold (103) is formed by filling a resin in a recess located in a frame between the battery and the terminal plate (102) in which the circuit substrate (3) is accommodated to cover the circuit substrate (3) on the side of the sealing plate, and the resin being used to make the parts integral to one another to exhibit excellent bonding strength, electrical insulation, chemical resistance, and to adverse any adverse thermal effects (see col. 11, lines 39-61; fig. 6A and 11A).

Therefore it would be obvious to one with ordinary skill in the art to combine the recess located in the battery pack of Masumoto to have a resin that covers the entire recess in which the circuit substrate is accommodated, because Masumoto teaches it makes the parts integral to one another to exhibit excellent bonding strength, electrical insulation, chemical resistance, and to adverse any adverse thermal effects.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA DAVIS whose telephone number is (571)270-7868. The examiner can normally be reached on 7:30am-5pm EST. Monday-Friday, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICIA DAVIS/  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795